UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,298	11/11/2003	Assaf Govari	U 014945-6	5756

7590 09/05/2007

Ladas & Parry
26 West 61st Street
New York, NY 10023

EXAMINER	
MEHTA, PARIKHA SOLANKI	
ART UNIT	PAPER NUMBER
3737	
MAIL DATE	DELIVERY MODE
09/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/706,298	GOVARI, ASSAF	
	Examiner	Art Unit	
	Parikha S. Mehta	3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-15,17-21,23-32 and 34-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-15,17-21,23-32 and 34-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's amendments to claims 18 and 20, filed 23 April 2007, are sufficient to overcome the previous rejection of these claims under 35 U.S.C. 112. Accordingly, the rejection is hereby withdrawn.

2. Applicant's arguments regarding the previous provisional rejection of claims 1-20 on the ground of nonstatutory obviousness-type double patenting over claims 4, 38, 42, 43 and 44 of application 10/029,473 have been considered but are not persuasive. Applicant alleges that because the co-pending claims fail to recite identical subject matter to that which is claimed by the instant invention, the double patenting rejection is improper (Remarks, p. 16). Specifically, Applicant argues that, since the copending claims recite subject matter that is not claimed by the instant invention ("signal processing circuits", Remarks p. 16-17), the obviousness-type double patenting rejection cannot stand. Examiner maintains that the broader nature of the instant claims does not preclude an obviousness-type double patenting rejection. If all recitations of the instant claims are either recited by or obvious over the copending claims, the rejection is proper.

Applicant requests that Examiner hold the double-patenting rejection in abeyance until a set of claims are deemed to be allowable in either the instant or copending application. Examiner hereby agrees to hold the double-patenting rejection in abeyance for the current Office Action only.

Additionally, Applicant has failed to respond to the previous objection to claim 19 as being a substantial duplicate of claim 14. Accordingly, the objection is maintained and reiterated below.

3. Applicant's arguments regarding the rejection of claims 1-20 under 35 U.S.C. 102 and 103, filed 23 April 2007, have been fully considered but they are not persuasive.

Applicant alleges that the applied reference, Ben Haim et al (US Patent No. 6,198,963) fails to disclose "receiving the RF driving field during a first period without driving the field generators, and during a second time period subsequent to the first time period and prior to transmitting the [output] as recited by the claimed invention" (Remarks p. 19). Specifically, Applicant argues that "[s]ince in either the learning mode or the testing mode, the sensor and the field generators of Ben Haim ('963) are activated in order to obtain a measurement", Ben Haim ('963) cannot anticipate receiving the driving field without driving the field generators.

Examiner respectfully directs Applicant's attention to the disclosure of Ben Haim ('963), specifically col. 3 lines 27-31, wherein the reference states "the confirmation is performed using any confirmation method known in the art, such as X-ray imaging, **preferably without using the verification device**" (emphasis added). Examiner interprets confirmation, as described by Ben Haim ('963), to constitute the first period claimed in the instant application. If one were to perform the method of Ben Haim ('963), without using the verification device for the confirmation step, one would not be driving the field generators. Therefore, Ben Haim ('963) sufficiently anticipates this limitation of the currently claimed invention.

Applicant further argues that Ben Haim "does not teach or suggest providing a plurality of transponders, and it would not be obvious to one skilled in the art to arrive at the claimed invention in view of Ben Haim" (Remarks p. 19-20). Examiner clarifies that Ben Haim's ('963) teaching of tracking multiple points along the object (col. 4 lines 7-15) can be reasonably combined with the further teaching of using a wireless transponder as a position sensor (col. 7 lines 64-65) to arrive at an embodiment wherein multiple points along the object are tracked with multiple transponders. Therefore, the use of multiple transponders as claimed is indeed obvious over the Ben Haim ('963) reference.

In view of the considerations discussed above, the instant claims remain rejected in view of Ben Haim ('963), as is further discussed below.

Claim Objections

4. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of claim 1, from which claim 8 depends. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

5. Claim 17 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of claim 14, from which claim 17 depends. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

6. Claim 19 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 14. When two claims in an application are duplicates or else are so close in content that they both cover the same

thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1-6, 8-11, 14, 15, 17-21, 23-27, 29, 32 and 34-36 are rejected under 35 U.S.C. 102(b) as being anticipated by Ben Haim (US Pat. No. 6,198,963), cited by Applicant.

Regarding claims 1-6, 8, 9, 11, 14, 15 and 17-20, Ben Haim ('963) discloses a method for tracking an implantable medical tube comprising positioning an RF driver to radiate a driving field toward the object by fixing a wireless transponder to the object, driving a verification device, equivalent to plurality of field generators, to generate electromagnetic fields to induce a voltage drop across the sensor coil, generating an output signal at the transponder, transmitting the output signal from the wireless transponder and receiving and processing the output to determine the coordinates of the object (col. 2 lines 59-61, col. 3 lines 16-18, col. 4 lines 38-47, col. 6 lines 61-65). Ben Haim ('963) discloses that the position determining system may include driving a plurality of field generators at different respective frequencies (col. 10 lines 46-49). Ben Haim ('963) discloses that the verification device is located outside the body (Ben Haim ('963) also discloses that the transponder includes at least one sensor coil, and that it is passive, and that the sensor includes means for converging the RF output to digital form (col. 4 lines 39-42, col. 14 lines 13-15). Ben Haim ('963) does not explicitly disclose the presence of a power coil, but by well-known definition a passive transponder inherently includes a coil for collecting and storing energy from an external RF source for self-powering operation. Ben Haim ('963) discloses that receiving the RF driving field is received during a first learn period, without driving the field generators, and during a second time period subsequent to the first time period and prior to transmitting the output (col. 3 lines 27-30, col. 4 lines 1-4, col. 5 lines 1-6). Ben Haim ('963) also discloses that the sensor may include an A/D circuit for converting the RF output to digital form (col. 14 lines 13-15). Because Ben Haim ('963) specifies that the conversion of the RF output to digital form is not required, it is implicitly disclosed that the output may be analog.

Regarding claim 10, Ben Haim ('963) discloses measuring an amplitude and a phase of the received signal (col. 5 lines 56-60).

Regarding claims 21, 23-27 and 29, Ben Haim ('963) discloses an apparatus for tracking an implantable object including an RF driver, a plurality of field generators, a wireless passive RF transponder fixed to the implantable object, a power storage device associated with the transponder, and a control circuit coupled to the sensor coil and power storage device, and a signal receiver adapted to receive the output signal from the transponder (col. 6 lines 23-42, col. 7 lines 14-15, col. 13 lines 24-46, col. 13 lines 58-62, col. 14 lines 13-15). Ben Haim ('963) discloses a capacitor for storing electrical energy derived from an RF driving field (col. 13 lines 50-56). Ben Haim ('963) discloses that the position determining system may include driving a plurality of field generators at different respective frequencies, which are received by the transponder and associated circuitry (col. 10 lines 46-49). Ben Haim ('963) further discloses that the transponder circuitry may operate on power received from one of the transponder coils, and further discloses that the circuitry may include a measuring unit for calculating an amplitude difference of the current flowing through the transponder coils, which is indicative of the voltage drop across the coils (col. 11 lines 20-22 and 28-31).

Regarding claims 32 and 34-36, Ben Haim ('963) discloses a wireless position verification apparatus for operation inside the body of a subject, including a sensor coil, signal analysis circuitry for sensing an amplitude and determining a low bound and a high bound of a parameter vector, a plurality of coils adapted to receive an applied RF field and a passive transponder, inherently capable of self-powering operation in receiving and transmitting RF signals as described above (col. 6 line 65, col. 7 lines 5-13 and 66-67). Ben Haim ('963) discloses that the transponder circuitry may operate on power received from one of the transponder coils, and further discloses that the circuitry may include a measuring unit for calculating an amplitude difference of the current flowing through the transponder coils, functionally equivalent to an ALU as described in the instant application (col. 11 lines 20-22 and 28-31). By the well-known relationships between voltage and current set forth by Ohm's law and Maxwell's equations, the difference in current flow is indicative of the voltage drop across the coil. Ben Haim ('963) includes a capacitor charged through one of the transponder coils, the capacitor being operable to discharge to a circuit (col. 8 lines 3-6).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 12, 13, 30, 31 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben Haim ('963).

Regarding claims 12, 13, 30 and 31, Ben Haim ('963) anticipates all features of the present inventions as described above, with the exception of specifying that the implant is a joint implant. Ben Haim ('963) generally teaches that the wireless position sensing system may be used to confirm the location of any object situated within a body (col. 4 lines 60-63). Ben Haim ('963) also teaches that a plurality of transponders may be used to assess the relative location of different parts of an object within the body by measuring the distance between respective transponders (col. 4 lines 7-11). Therefore, it would have been obvious to one of ordinary skill in the art to apply the method of Ben Haim ('963) to locating the distance between multiple transponders on a joint implant located in the body. Likewise, it would have been obvious to one of ordinary skill in the art to modify the apparatus of Ben Haim ('963) to use for the object a joint implant with multiple portions and multiple transponders. Furthermore, it would have been an obvious design choice for one of ordinary skill in the art at the time of invention to use the apparatus of Ben Haim ('963) on a femur head and acetabulum.

Regarding claim 28, Ben Haim ('963) does not disclose that the capacitor must have a capacitance between 5 and 20 microfarads. Ben Haim ('963) does disclose that the capacitor should have a large enough capacitance to store substantial charge, such as 0.1 microfarad (col. 13 lines 58-60). At the time of invention, it would have been an obvious matter of design choice to a person of ordinary skill in the art to choose a capacitor with capacitance between 5 and 20 microfarads, as this range still satisfies the requirement set forth by Ben Haim ('963) for a capacitor with large enough capacitance to store substantial charge. One of ordinary skill in the art would furthermore expect the tracking apparatus of Ben Haim ('963) to work equally well with a capacitor of capacitance between 5-20 microfarads.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parikha S. Mehta whose telephone number is 571.272.3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Parikha S. Mehta
Examiner – Art Unit 3737

BRIAN L. CASLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700